

claim 16. The comments offered by the Examiner with respect to claim 1 were kept in mind when amending that claim. Applicants submit that claim 1 is now in allowable form and hereby respectfully request that the objection thereto based upon informalities be withdrawn.

5           Responsive to the rejection of claims 5-7, 11, 13, and 14 under 35 U.S.C. § 112, 2<sup>nd</sup> paragraph, Applicants have amended claims 5-7 and 13 and have cancelled claims 11 and 14, keeping in mind the comments offered by the Examiner. Applicants submit that claims 5-7 and 13 are now in allowable form and hereby respectfully request that  
10           the rejection thereof based upon 35 U.S.C. § 112, 2<sup>nd</sup> paragraph, be withdrawn.

          Responsive to rejection of claim 1 on 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,453,292 (Gerland et al.), Applicants have amend claim 1 and submit that claim 1 is now in  
15           condition for allowance.

          Claim 1, as amended, recites in part:

          depositing the dry powder formulation onto the  
          substrate to thereby fill the one of a  
20           depression and a channel adapted to receive the  
          dry powder formulation...

Applicants submit that such an invention is neither taught, disclosed, nor suggested by Gerland et al '292 or any of the other cited references, alone or in combination.

25           Gerland et al. '292 discloses a coating process involving the application of a luminophore in which the surface of the substrate to be coated is first coated with acrylic resin dissolved in an organic

solvent. After evaporation of the solvent, the luminophore powder enveloped in glass solder is applied to the remaining acrylic resin layer in a finely dispersed form. This glass solder luminophore layer is heated at an elevated temperature for a short time in order to cause the glass solder to melt and thereby anchor the luminophore particles on the surface. However, Gerland et al. '292 does not disclose or suggest the attaching of such luminophore within a depression or channel of a substrate. In fact, Gerland et al. '292 does not even disclose or suggest that the substrate to be coated has any depressions or channels therein whatsoever. Thus, Gerland et al. '292 fails to teach or suggest the present invention as set forth in claim 1, as amended.

Responsive to the rejection of claims 27, 28, 31 and 32 under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over W0964/26991 (Katagiri) (of which U.S. Patent No. 6,074,739 to Katagiri has been cited as an equivalent), Applicants have amended claims 27, 28, 31, and 32 and submit that such claims are now in condition for allowance.

Each of claims 27 and 28, as amended, recite in part:

A substrate bearing photo-luminescent material, substrate having one of a depression and a channel...

In a similar manner, claims 31 and 32, as amended, recite in part:

said handrail comprising one of a depression and a channel, said hand rail bearing photo-luminescent material...

Applicants submit that such an invention as set forth in each of claims 27, 28, 31 and 32 is neither taught, disclosed, nor suggested by Katagiri (WO964/26991) or any of the other cited references, alone  
5 or in combination.

Katagiri (WO'991), based upon U.S. Patent No. 6,074,739, discloses a composite exhibiting long afterglow characteristics, the composite including a phosphorescence layer and a coloration layer as independent layers. However, Katagiri does not disclose or suggest  
10 that the composite disclosed therein has any sort of depressions or channels associated therewith. Thus, Katagiri does not teach or suggest the present invention as set forth in each of amended claims 27, 28, 31, and 32.

Applicants submit that having one of a depression and a channel  
15 in the object (i.e., the substrate or the handrail) bear photo-luminescent material is critical to the present invention. The criticality is that the presence of such a depression or channel allows the photo-luminescent material to be applied to a controlled portion of the given surface and, by being located in such a  
20 depression or channel, effectively reduces the amount of wear that the photo-luminescent material need be subjected to.

For all the foregoing reasons, Applicants submit that claims 27, 28, 31, and 32 are in condition for allowance and thereby respectfully request that the rejection thereof based upon Katagiri  
25 (WO '991) be withdrawn.

Responsive to the rejection of claims 29 and 30 under 35 U.S.C. § 103(a) as being unpatentable over Katagiri (WO '991) in view of GB (sic) 2 234 539 A (Miller et al.), Applicants have amended claims 29 and 30 and submit that claims 29 and 30 are now in condition for allowance.

Claims 29 and 30, as amended, each recite in part:

said step nosing having one of a depression and a channel, said step nosing bearing photo-luminescent material...

Applicants submit that such an invention as set forth in each of claims 29 and 30 is neither taught, disclosed, nor suggested by Katagiri (WO '991), Miller et al (GB '539), or any of the other cited references, alone or in combination.

Katagiri does disclose photo-luminescent coatings to hand rails and "escape tools". However, Katagiri does not disclose the application to a step nosing, as admitting by the Examiner. Further, as set forth previously, Katagiri does not disclose or suggest applying photo-luminescent coatings to objects (i.e., step nosings) that have at least one depression or channel therein. Additionally, Katagiri only discloses or suggests forming luminescent deposits in sheet form and does not set forth a form of which could be inserted into a depression or channel. Thus, Katagiri '991 fails to teach or suggest the present invention as set forth by either of amended claims 29 and 30.

The Examiner has cited Miller '539 in an attempt to overcome the shortcomings associated with Katagiri. Miller '539 does disclose

a stair nosing 10A that includes an overlay 16 of phosphorescent material. Miller further sets forth that nosing 10A may be provided with one or more indentations to receive the overlay. However, there are various problems associated with attempting to modify Katagiri with Miller et al. First of all, Katagiri does not disclose or suggest cutting the composite material thereof into thin strips that could be used to form multiple inserts. Additionally, there is no indication in Katagiri that the composite thereof could be safely used within a step nosing and not create a possible slip hazard. Thus, it would not have been obvious to one of ordinary skill in the art at the time the invention was made to modify Katagiri with Miller et al. to thereby arrive at the invention set forth in each of claims 29 and 30, as amended.

The step nosing claimed in claims 29 and 30 is not the same product as that disclosed in Katagiri and Miller et al., either alone or in combination. The product Miller discloses and teaches is an insertable element that is not fused to a substrate surface. Katagiri is a sheet like material that could<sup>not</sup> be fused to a substrate surface. As such, Miller provides no motivation for modifying Katagiri to specifically form the fused composite Katagiri into one or more insertable elements to be used within the step nosing of Miller. Thus, in combination, Katagiri in view of Miller et al. does not disclose or suggest a product which is equivalent to the step nosing set forth in claims 29 and 30, as amended.

The techniques disclosed for laying down the material in Katagiri can not be used in the step nosings of Miller. Specifically, it is not possible or obvious to screen print or wet coat step nosings in the manner of Katagiri without placing the material elsewhere than the step nosing. Thus, the material product of each of claims 29 and 30 of the present invention is a different product than that achievable by the disclosure of Katagiri or Miller et al., either alone or in combination.

For all the foregoing reasons, Applicants submit that claims 29 and 30 are now in condition for allowance and hereby respectfully request that the rejection thereof based upon Katagiri and Miller et al. be withdrawn.

Responsive to the rejection of claims 1, 2, 4-10, and 12 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,242,056 (Spencer et al), Applicants have amended claims 1 and 4-7 and have cancelled claims 2 and 9 and submit that claims 1, 4-8, 10, and 12 are now in condition for allowance.

Claim 1, as amended, recites in part:

depositing the dry powder formulation onto the substrate to thereby fill the one of a depression and a channel..., the formulation being deposited by operation of gravity...

Applicants submit that such an invention is neither taught, disclosed, nor suggested by Spencer et al or any of the other cited references, alone or in combination.

Spencer et al discloses paint compositions that include color enhancing or light reflecting beads and/or flakes. Such paints are to be sprayed onto a surface and then dried/baked, the spraying can be wet (aqueous or with a solvent) or as a dry powder. Spencer et al  
5 does not disclose or suggest that any of the surfaces to be painted are to have any sort of depressions and/or channels therein. Furthermore, since only spray painting is disclosed by Spencer et al., there is no disclosure or suggestion of deposition a dry powder paint formulation by the operation of gravity. Thus, Spencer et al.  
10 fails to teach or suggest the present invention as set forth in claim 1, as amended.

For all the foregoing reasons, Applicants submit that claim 1, and claims 4-8, 10, and 12 depending therefrom are now in condition for allowance and hereby respectfully request that the rejection  
15 thereof based upon Spencer et al. be withdrawn.

With references to claim 4 and 5, Spencer et al does not disclose or suggest the specific ratios that are cited. From Spencer et al, the ratio of photo-luminscent material used is selected in part because of the spraying or wet printing techniques used. Thus,  
20 one of ordinary skill in the art would not automatically know how to modify Sencer et al to optimize the composition ratio of the present invention since the present invention instead relies on gravity for delivering the formulation to the surface of the substrate. Additionally, optimizing particle sizes of beads or optimizing resin  
25 types is also not obvious, given the different techniques in the

methods used in the present invention relative to those of Spencer et al.

With respect to claims 6-8, in particular, Spencer et al. teaches a manner of applying light-emitting micro bead paint compositions by spraying them onto a substrate. It is submitted that it would not be obvious to one of ordinary skill in the art that the arbitrary use of heating parameters of Spencer et al for a given resin system would automatically work in the present invention, as set forth in claim 1, the reason being that the coatings of Spencer et al are expressly sprayed so as to be thin. It is submitted that the general use environment of the present invention differs significantly enough from that of the environment presented by Spencer et al that the process parameters presented in claims 6-8 are not rendered obvious based on the teachings of Spencer et al.

Claim 3 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Spencer et al '056 in view of U.S. Patent No. 5,698,301 (Yonetani). Claim 3 has been cancelled without prejudice, rendering this rejection moot.

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Spencer et al. '056 in view of U.S. Patent No. 3,983,263 (Weiss et al). Claim 11 has been cancelled hereby, rendering this rejection moot.

Responsive to the rejection of claims 13-15, 17, 18, and 21-24 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,740,833 (Hanson et al), Applicants have amended claims 13, 18, and



23, and have cancelled claims 14, 15, 17, and 21. Applicants submit that claims 13, 18, and 22-24 are now in condition for allowance.

Claim 13, as amended, recites in part:

5           the hopper and the orifice being configured for  
delivering a sufficient amount of the dry  
powder formulation to said substrate surface  
within one pass thereof under said at least one  
orifice...

10       Applicant submit that such an invention is neither taught, disclosed,  
nor suggested by Hanson et al '833 or any of the other cited  
references, alone or in combination.

15           Hanson discloses a powdered coating material metering and  
dispensing apparatus 39 (Figs. 7 and 8) which dispenses powdered  
alloy 44 onto the upper surface of workpiece 21. Holders 22 and  
workpiece 21 are disposed in the station 26 where powder dispensing  
occurs. Workpiece 21 is rotated in order to ensure that the powdered  
alloy 44 is applied to the areas of the workpiece in an even and  
continuous manner along the groove 32. As such, the surface of  
20       workpiece 21 being coated will effectively pass by powder feed means  
78 several times during the coating step. Thus, of Hanson et al '833  
fails to teach or suggest the present invention as set forth in claim  
13, as amended.

25           For all the forgoing reasons, Applicants submit that claim 13,  
and claims 18 and 20-24 depending therefrom, are now in condition for  
allowance and hereby respectfully request that the rejection thereof  
based upon Hanson et al '833 be withdrawn.

Furthermore, with respect to claim 18, Applicants submit that it would not be an obvious variation to "place the substrate and orifice in as close contact as possible to prevent spillage..." as contended by the Examiner. Hanson et al can not have the dispensing head in close-to-contact with the workpiece because the disclosed dispensing system would not be able to work. The system of Hanson et al clearly relies on the workpiece being rotated a number of times while powder is dropped over the groove area so that a relatively even layer is applied to the groove area. If the dispensing head were to come in close contact with the workpiece after the first rotation of the workpiece, powder would be displaced by the dispenser head to places it was not previously dispensed. As such, there would be no way to get an even application of the powder. In fact, Hanson et al discloses overfilling the channel with powder and thus spilling powder onto the top surfaces and therefore needing an expensive final grinding process to remove the excess alloy material after heat treatment. An advantage of the present invention is that a final grinding step is precluded. Thus, Applicants submit that claim 18, in addition to being dependent from allowable claim 13, is allowable over Hanson et al based upon its own merits.

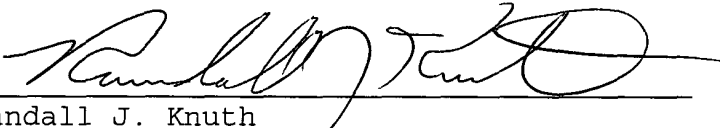
Claim 19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Hanson et al '833 in view of U.S. Patent No. 5,912,027 (Delmer et al). However, claim 19 depends from claim 13 which is condition for allowance for the reasons set forth above.

Thus, Applicants submit that claim 19 is also in condition for allowance, the allowance of which is respectfully requested.

The Examiner has indicated that claim 16 is objected to for depending from a rejected base claim, but otherwise discloses subject matter that is not taught or suggested by the prior art, for which courtesy the Examiner is thanked. Applicants have not rewritten claim 16 in independent form at this time, instead submitting that claim 16 is allowable due to its dependency upon now allowable claim 13.

If the Examiner has any questions or comments that would speed prosecution of this case, the Examiner is invited to call the undersigned at 260/485-6001.

Respectfully submitted,

  
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RJK/stt10

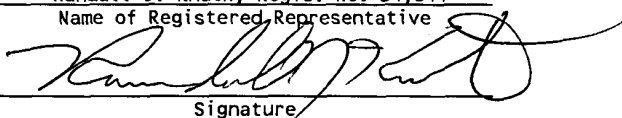
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Signature  
April 1, 2003  
Date